

Appl. No. 10/695,813
Amendment dated: July 3, 2007
Reply to OA of: April 19, 2006

REMARKS

Reconsideration of the present patent application is respectfully requested in view of the following remarks.

I. Response to Rejections Under 35 U.S.C. § 102

The Examiner indicates that claims 1, 2, 4 and 6-8 of the present patent application are rejected under 35 U.S.C. § 102 as being anticipated by the US Patent No. 6,462,735 (Naito et al.).

This rejection is again respectfully traversed on the grounds that the Naito patent fails to disclose or suggest processing the picture signals of three chromatic lights by generating three gamma curves, all at the same time, as claimed. To the contrary, Naito gamma not only fails to disclose simultaneous gamma curves *generation*, but to the contrary does not disclose any gamma curve generation. Instead, Naito discloses correction of a picture image based on stored V-T characteristics.

In the "response to arguments" section of the final Office Action, the Examiner appears to agree that Naito teaches non-simultaneous processing of the picture signals for the three chromatic light. However, the Examiner argues that the claims were not limited to processing "at the same time." As a result, claim 1 has now been amended to more explicitly recite that the process occurs at the same time. Furthermore, it is respectfully submitted that the differences between the claimed invention and the arrangement of Naito extend beyond the mere timing of gamma curve generation.

Claim 1 now recites that the "coding unit" of the claimed driving circuit

generates a plurality of "coded data" according to a plurality of curves at the same time, wherein the plurality of characteristic curves are Gamma curves for three chromatic lights (red, green, and blue), respectively. As illustrated in Figs. 3 and 4, all of the latch units 221-223 in Fig. 3 that supply data to the digital-to-analog converters 224-226 and buffers 227-229 are controlled by the timing signals illustrated in Fig. 4. This generation of three reference voltages permits gamma correction of the picture signal and thereby prevents color dispersion by the LCD display unit, as noted in lines 9-11 on page 2 of the original specification.

In contrast, as described in col. 8, line 63 to col. 9, line 20 of the Naito patent, the digital gamma correction circuit 220 performs "gamma correction" on a digital signal (i.e. picture signal) output from the A/D converter 100, based on the memory information predetermined by applied voltage-transmittance characteristics (V-T characteristics) inherent in the liquid crystal device 400, in which the V-T characteristics are the gamma curves stored in the EEPROM 600, as shown in Fig. 1 of the Naito patent. This is completely different from the gamma correction described in the present application, in which the driving circuit includes a coding unit, a reference voltage generator and a driving unit, and generates "three separate and regulable Gamma reference voltages" in real time, to "gamma correct" a picture signal and then drive the display cells. Instead, of generating three separate and regulable voltages at the same time, the "digital gamma correction circuit 220" of the Naito patent "gamma corrects" a picture image based on the predetermined "V-T characteristics" being stored in the EEPROM 600.

Moreover, in the present application, the plurality of sample/latch circuits, the plurality of digital-to-analog converters and the plurality of buffers of the "reference voltage generator" of the claimed driving circuit generate the three gamma reference

voltages for "gamma correction" purposes but do not gamma correct the picture signal, nor process the picture signal after the picture signal has been "gamma corrected." Thus, the function of these elements is not, as alleged by the Examiner, the same as the ASIC 210, conversion block 260, and amplifying block 3000 of Naito. As shown in Fig. 2 of the Naito patent, the ASIC 210, D/A conversion block 260 and the amplifying block 300 not only "gamma correct" the picture signal, but also process the picture signal after the picture signal being "gamma corrected".

In summary, in the present invention, the claimed driving circuit generates "three separate and regulable Gamma reference voltages", and drives the display cell after the picture signal has been gamma corrected. The claimed driving circuit does not gamma correct the picture signal itself. In contrast, in the Naito patent, the ASIC 210, D/A conversion block 260 and the amplifying block 300 not only "gamma correct" the picture signal based on the predetermined memory information (V-T characteristics) stored in the EEPROM 600 of Fig.1, but also process the picture signal after the picture signal being "gamma corrected", with the operation of D/A conversion block 260 and the amplifying block 300.

Because the driving circuit recited claim 1 of the present patent application is structurally and functionally different from the driving circuit including the "signal processing circuit 200", the "amplifying block 300" and the "data drive circuit 430" of the cited Naito patent, withdrawal of the rejection of claim 1 based on the Naito patent is respectfully requested. The other claims included in this rejection are directly or indirectly dependent on claim 1, and thus are distinguished from the prior art by the same reason.

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II. Response to Rejections Under 35 U.S.C. § 103

The Examiner indicates that claims 3 and 5 of the present patent application are rejected under 35 U.S.C. § 103(a) as being unpatentable over US Pat. No. 6,462,735 (Naito et al.), in view of US Pat. No. 4,183,046 (Dalke et al.).

This rejection is again respectfully traversed on the grounds that the Dalke patent, like the Naito patent, fails to disclose or suggest a “coding unit” for a flat panel display driving circuit that generates a plurality of “coded data” according to a plurality of characteristic curves at the same time, wherein the plurality of characteristic curves are Gamma curves for three chromatic lights (red, green, and blue), respectively, as now recited in claim 1.

As pointed out in the previous response, although the Dalke patent does disclose that “coded data are inputted through sample/latch”, the “sample/latch process” of Dalke is executed on a traditional color CRT television, and not on a flat panel display. Flat panel displays require an entirely different sample/latch arrangement than CRTs. Therefore, it would not have been obvious to include the circuit of Dalke in the flat panel display driver of Naito. To the contrary, the “technology gap” between a traditional color CRT television and a flat panel display is so huge that persons skilled in the art of the traditional color CRT television are a totally different group of technicians than those skilled in the art of the flat panel display. One skilled in the art of the flat panel display could not have anticipated, or found obvious, the “sample/latch process” of claims 3 and 5 of the present patent application based on the “sample/latch process” executed in the traditional color CRT television of the Dalke patent, and withdrawal of the rejection of claims 3 and 5 based on the Naito and Dalke patents is respectfully requested.

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CONCLUSION

In view of the foregoing remarks, reconsideration and allowance of the application are now believed to be in order, and such action is hereby solicited. If any points remain in issue that the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the telephone number listed below.

Respectfully submitted,

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